METROPOLITAN TRANSPORTATION COMMISSION

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ABAG ASSOCIATION OF BAY AREA GOVERNMENTS

Regional Airport Planning Committee

June 8, 2007

TO: Regional Airport Planning Committee
FROM: Staff of the Regional Airport Planning Committee

SUBJECT: Staff Summary of Federal Aviation Administration Report "*Capacity Needs in the National Airspace System 2007 through 2025, Metropolitan Area Demand and Operational Capacity in the Future*" (FACT 2)

In May of 2007, the FAA issued a report entitled "*Capacity Needs in the National Airspace System 2007 through 2025, Metropolitan Area Demand and Operational Capacity in the Future*" (FACT 2). FACT2 is an assessment of the future capacity of the Nation's airports and metropolitan areas. Its goal is to determine which airports and metropolitan areas have the greatest need for additional capacity. Traffic in the National Airspace System (NAS) was modeled using projections of future enplanements and operations from two different sources: the FAA's Terminal Area Forecast (TAF) and the Center for Advanced Aviation Systems Development's experimental model of origin and destination traffic. The TAF assesses traffic on an airport-by-airport basis based on the economic and demographic characteristics of the airport metropolitan area. The following is a summary of some of the important findings:

Summary. Many existing airports will need to be expanded to meet future demand. The metropolitan areas that have traditionally driven aviation demand will continue to do so. Metropolitan areas on both coasts have critical capacity problems that are becoming more chronic. In the last 40 years, two new major commercial service airports have opened in the United States, Dallas- Fort Worth and Denver International. We may need to add as many as four more in the next 20 or 30 years. Atlanta, Chicago, Las Vegas and San Diego are among the likely candidates.

In addition to building new runways and airports, we need to expand regional planning in key areas of our country and examine the role of congestion management measures in the few locations where expanding airport capacity is unlikely. Eighteen of our biggest airports are back to pre-9/11 levels. It is likely that four more – Baltimore, Detroit, Newark and Phoenix – will achieve those levels in the next couple of years.

FACT 2 examined potential benefits of some emerging concepts of the NextGen air traffic system that might help alleviate congestion at the busiest 35 airports, and the news was very encouraging. Every single one of them experienced a projected drop in delays. The anticipated benefits of NextGen are critically important as efficiency enhancements for airports with planned runway improvements and even more so for airports in the National Airspace System where geographic and other constraints prevent physical expansion of the airfield. In addition, NextGen is critical to handling traffic volume and ensuring smooth, high capacity aircraft flows between airports. It also enhances our ability to meet our capacity requirements in ways that cause less harm to the environment and less disturbance to our neighbors – so the expansion of the airspace is beneficial to everyone.

Planned Improvements The FACT 2 analysis includes planned improvements affecting runway capacity for two future planning periods, 2015 and 2025:

1. New or Extended Runways.
2. New or Revised ATC Procedures.
3. Airspace Redesign.
4. Other Assumptions. (existing environmental restrictions)

This updated study shows that some airports have higher capacities than originally presumed and thus less need for additional capacity.

Input from Affected Airports. A few important issues were raised by a number of the airport sponsors:

1. An airport's runways are not necessarily the limiting capacity factor. Often, taxiways and terminal gates can limit the annual number of operations more than runway capacity by itself. However, the present analysis did not consider potential limitations imposed by the taxiway or terminal infrastructure.
2. Airspace limitations also impact capacity. The ability of the airspace around many of the airports to accommodate more arrivals and departures may be limited, especially where there are several major airports in the same area (Southern California, Northern California, Chicago, New York, Philadelphia, and Southern Florida). Enroute airspace congestion may also impose departure delays. In other cases, operational flexibility may be affected by nearby military airspace or environmentally sensitive areas.

Some Findings of the FACT 2 Study. The FACT 2 analysis found the total number of airports and metropolitan areas needing additional capacity beyond what is currently planned was lower than reported in FACT 1. The FACT 2 analysis also identified a greater number of large hub airports that will need additional capacity beyond what is currently planned.

New runways typically provide the greatest capacity enhancement in the airport environment, and more will be needed to manage delays throughout the NAS. Some communities, however, are constrained from building runways or implementing other airfield projects to enhance capacity. In such cases, NextGen, which includes various technology advancements planned to transform how we move people and goods, will be required to provide solutions for additional capacity.

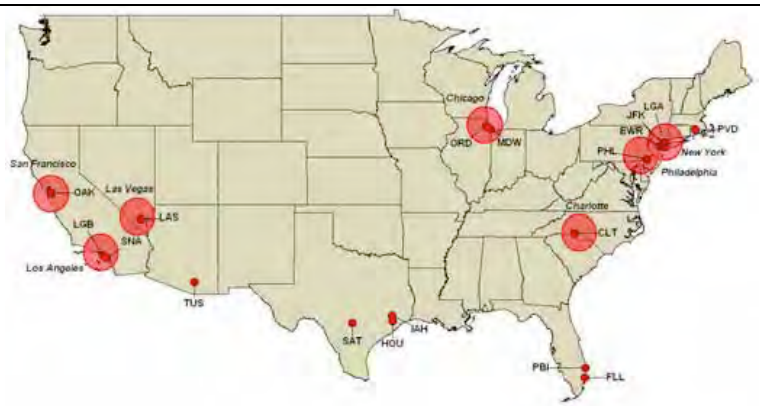
Figure 2
Airports and Metropolitan Areas Needing Additional Capacity in 2015 after Planned Improvements

6 airports that need additional capacity in 2015

4 metro areas that need additional capacity in 2015

By adding the additional capacity gained from the planned improvements expected by 2015 to the 2007 capacity and measuring this against the forecast demand for 2015, the FACT 2 analysis identified six airports and four metropolitan areas that will need additional capacity beyond what is already planned

Figure 3
Airports and Metropolitan Areas Needing Additional Capacity in 2015 if Planned Improvements Do Not Occur



18 airports that need additional capacity in 2015

7 metro areas that need additional capacity in 2015

Measuring the 2007 capacity against the forecast demand for the 2015 mid-term planning period reveals that 18 airports and seven metropolitan areas will need additional capacity if the existing airfield configurations remain constant without any capacity enhancements

Findings Specific to the Bay Area. By adding the additional capacity gained from the planned improvements expected by 2015 to the 2007 capacity and measuring this against the forecast demand for 2015, the FACT 2 analysis identified six airports and four metropolitan areas that will need additional capacity beyond what is already planned.

1. OAK: Geographic, terrain, and airspace issues continue to constrain airports like OAK. These issues limit the airport's ability to add additional runway capacity. A regional solution in conjunction with other airports in the Bay Area may be needed.
2. Based on the six airports identified in the 2015 mid-term planning period, the metropolitan areas surrounding these airports were assessed. The analysis found that four metropolitan areas did not have sufficient capacity to meet the anticipated demand in 2015: Los Angeles, New York, Philadelphia, and San Francisco.

Conclusions and Recommendations. In FACT 2, 18 airports around the country are identified as needing additional capacity by 2015, and 27 by 2025, if the airport system remains the same as it is today without the planned improvements. The various improvements considered by this study, ranging from runways under construction to concepts for the future ATC system, would reduce these numbers from 18 to 6 in 2015, and from 27 to 14 in 2025. There would be significant reductions in delay levels at all 35 OEP airports and most of the non-OEP airports studied, even those still identified as capacity-constrained.

1. **Regional Solutions.** Studies of regional traffic and development alternatives have been used to analyze specific air travel behavior within defined regions that experience significant congestion, including San Francisco, the Los Angeles basin, New York, and Boston. Several of these regions have ongoing study efforts in place. These initiatives should continue, and may need additional emphasis.

2. **Congestion Management.** Fortunately, we can add capacity to solve most of our problems. However, in some cases runway construction may not be a viable alternative. Today, LGA is a good example. In the next 10 years, the San Francisco Bay area will serve as an additional example of a capacity-constrained metropolitan area where runway construction may not be an option. In these cases, demand management, regulatory or economic solutions, and other market mechanisms may need to be investigated.

3. **High-Density Corridors and Multi-Modal Planning.** Even with the planned improvements, the FACT 2 analysis identified significant and chronic capacity problems on the east and west coasts. The impact of these capacity problems is manifested as delays throughout the system. Weather, peak travel periods, and other factors will exacerbate delay. The demand for travel in these high-density corridors may require consideration of high-speed ground modes as well as short-haul air travel. For example, it would be useful to know the impact of short-haul travel between SAN, SFO, LAX, LAS, and PHX. In order to adequately plan for airport and multi-modal transportation improvements and infrastructure investment needed to satisfy this corridor-level travel demand, it will be necessary to better understand the travel behavior and options for accommodating demand in the country's busiest travel corridors. The Board of Governors of the Airport Cooperative Research Program (ACRP) has unanimously approved undertaking an FAA suggested study to examine multi-modal travel behavior and the impact of travel demand on high-density travel corridors linking mega-regions on the east and west coasts. The National Academy of Sciences' Transportation Research Board (TRB) administers the ACRP and is pursuing this as a quick response study. TRB expects to award a contract for the study in the summer of 2007.

4. **NextGen.** An attempt was made in this study to simulate the impact of certain NextGen concepts on airport operations. Although FACT 2 did not model airspace and enroute changes, the results provide a glimpse of the potential benefit of implementing NextGen throughout the NAS. Forecast delay reductions varied by airport, but all 35 OEP airports saw benefits, and some experienced significant delay reduction. These findings indicate that the FAA should move forward aggressively to develop the NextGen concepts, assess system benefits and costs, and identify appropriate methods of financing the improvements. ATC improvements of NextGen are especially relevant at capacity-constrained airports where runway expansion or new runway construction is not an option.